

Branch: DRILLING ENGINEERING			Faculty:- Tapas Sutar		
Subject: Drilling Machinery-I/TH-02	No of periods: 4hrs/week	Total Period: 60 Total week: 15		End Sem exam: 80 assesment: 20	Internal
Scheduled Session: From			to <i>Nov-2021</i>		
Week	Period	Topics			Remarks
		1.0 Diamond Drilling Rig			
1st	1st	1.1	Explain the general mechanical features of diamond drills.		
	2nd	1.2	State the common technical specifications of diamond drills.		
	3rd & 4th	1.3	State the different sources of powers for diamond drills and compare their merits and demerits.		
2nd	1st & 2nd	1.4	Explain the mechanism of transmitting power to hoisting drum and spindle for the rotary motion of drill string		
	3rd & 4th	1.5	State the different feed mechanisms used in core drills and discuss their effectiveness.		
3rd	1st & 2nd	1.6	Explain the feed mechanism of screw feed and hydraulic feed drill head.		
	3rd & 4th	1.7	Solve problems relating capacity of rig to deploy for various depths to be drilled at different attitudes.		
		2.0 Vibration in Diamond Drilling			
4th	1st & 2nd	2.1	State the causes of vibration in diamond drill and suggest their remedies.		
	3rd	2.2	State the miscellaneous causes of vibration		
	4th	2.3	Explain the means of elimination of vibration due to rock formation.		
5th	1st & 2nd	2.4	State the effect of rod strength vibration on core recovery and diamond wear.		
		3.0 Derrick			
	3rd	3.1	State the different types of derrick used in core drilling.		
6th	4th & 1st	3.2	Explain the construction and design of different derricks.		
	2nd	3.3	State the field of application of different derricks.		
	3rd	3.4	Explain the process of erection and dismantling of different types of derrick used in core drilling.		
	4th	3.5	State the daily, weekly, monthly and yearly care and maintenance of derricks.		
		4.0 Core Barrels			
7th	1st	4.1	State the different core barrels used in coring operation.		
	2nd	4.2	State the different sizes of core barrels.		
	3rd, 4th & 1st	4.3	Explain the design construction of core barrel of different series.		
8th	2nd 3rd & 4th	4.4	State the field of application of S.T., different types of D.T. and T.T. wireline core barrels		
		5.0 Core Bits			
9th	1st, 2nd & 3rd	5.1	State the different types and designs of bits used in coring operation.		
	4th	5.2	State the various sizes of diamond and T.C. bits.		
10th	1st	5.3	Discuss the field of application of different bits.		
	2nd & 3rd	5.4	State the function of Reamer Shells		
	4th	5.5	Explain the use of Reamer Shell of different series.		
11th	1st	5.6	State the use of PCD bits.		
		6.0 Casing			
	2nd	6.1	State the function of Casing.		
	3rd	6.2	Explain the casing requirement for the progress of hole depth.		
12th	4th	6.3	Enumerate the casing appliances.		
	1st & 2nd	6.4	State the general difficulties occurring in the lowering and recovering casings.		
	3rd	6.5	State the general repairing works to be carried out for reused of old casings.		
	4th	6.6	State the different type of casing used in core drilling.		

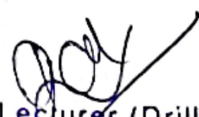
13th	1st	6.7	Differentiate F.C. Casing with F.J. Casing.	
	7.0 Fishing			
	2nd	7.1	What do you mean by fishing?	
	3rd & 4th	7.2	State the means of determining the position and condition of detached tools.	
14th	1st & 2nd	7.3	How to calculate the depth of fish?	
	3rd & 4th	7.4	Enumerate the various fishing tools used in Diamond drilling for recovering the fish including hydraulic jar.	

SYLLABUS COVERAGE UP TO INTERNAL ASSESSMENT

Chapters- 1 & 2

NOTES:-


Lecturer (Drilling)
O.S.M.E., Keonjhar


Senior Lecturer (Drilling)
OSME, Keonjhar